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| 10/563,898 | 01/09/2006 | Jan-Jette Blange | TS6450 US | 7179 |

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| EXAMINER |
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NGUYEN, MAI T

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| ART UNIT | PAPER NUMBER |
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3671

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06/29/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/563,898 | Applicant(s) BLANGE, JAN-JETTE | |
| | Examiner Mai T. Nguyen | Art Unit 3671 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-9 and 12-19 is/are rejected.
- 7) ☒ Claim(s) 3,4,10,11 and 20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/9/06, 9/27/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the jetted stream, the entrance window, the return stream, and the fluid path connecting the return stream with the entrance window, as set forth in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the tool in a borehole and the recirculation of the fluid as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If

the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. Applicant is reminded of the proper language for an abstract of the disclosure. The form and legal phraseology often used in patent claims, such as "means" should be avoided in lines 2, 8 and 10 of the abstract.

NOTE: The claims have been examined as best understood in light of the disclosure.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claim 1 recites the limitations "nozzle means" in line 2 and "filtering means" in line 8. There is insufficient antecedent basis for this limitation in the claim.
7. Claim 3 recites "a relatively large aspect ratio" which is considered indefinite since relatively lacks a frame of reference.
8. Claims 6, 13 and 17 do not set forth any further limitations to the claimed structure.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 2, 5-9 and 12-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Blange (US 6,510,907).

Regarding claim 1, Blange discloses a tool for excavating an object in figure 1, the tool comprising a jetting system 5 having a nozzle means 15 arranged to receive a fluid and abrasive particles via an abrasive particle inlet 14, and arranged to impinge the

object to be excavated with a jetted stream 30 of the fluid mixed with the abrasive particles, the tool further comprising a recirculation system arranged to recirculate at least some of the abrasive particles from a return stream, downstream impingement of the jetted stream with the object to be excavated, back to the jetting system via the abrasive particle inlet, the abrasive particle inlet having an entrance window 18 whereby filtering means 16, 19, 22, 24 is provided in a path fluidly connecting the return stream with the entrance window, capable of keeping the abrasive particle inlet free from objects of the same size or larger than the size of the entrance window, which filtering means is passable for the abrasive particles.

Regarding claim 2, Blange discloses the filtering means 16, 19 is provided with a filter opening shaped or arranged at the left end of inlet 14 such that the filtering means is impassable for a particle having the same projected size and shape as the entrance window of the abrasive particle inlet and at the same time such that the filter opening cannot be fully blocked by one such a particle, see column 3, paragraph 1 and figure 1.

Regarding claims 5, 12 and 16, Blange discloses the recirculation system comprises a support surface 16 to guide the abrasive particles towards the abrasive particle inlet, whereby the filtering means 19, 22, 24 are provided in the form of a skirt creating a filter opening in the form of a slit between the skirt and the support surface, see column 3, paragraph 1.

Regarding claims 6, 13 and 17, Blange discloses the skirt 19, 22, 24 is arranged to guide fluid from the return stream into the abrasive particle inlet in a path along the support surface 16, see figure 2.

Regarding claims 7, 14 and 18, Blange discloses the recirculation system comprising a transport device in figures 1 and 3 for transporting the abrasive particles in a selected direction towards the abrasive particle inlet, the transport device comprising:

a support member 16 having a support surface for supporting the abrasive particles, the support surface extending in the selected direction;

a separator magnet 26-29 arranged to generate a magnetic field for retaining the particles on the support surface whereby the magnetic field on the support surface is arranged to have a high-field band, a low-field band, and a magnetic field gradient in a gradient zone between the high- and low-field bands; and

means 20 for advancing the high- and low-field bands relative to the support surface.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 8, 9, 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blange in view of Blange (US 2002/0079998).

Regarding claims 8, 15 and 19, Blange '907 discloses the high- and low-field bands but fails to disclose magnetic paths. Blange '998 discloses a tool for excavating having cylindrical magnet 28 formed of three smaller magnets 28a, 28b, 28c arranged so a first magnetic path from a first magnetic pole to a second magnetic pole is shorter

than a second magnetic path crossing a gradient zone from the first magnetic pole to any other nearest magnetic pole of opposite polarity, see figure 5 and page 2, paragraph [0024]. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide magnet of Blange '907 with the magnetic paths of Blange '998 to facilitate the removal of abrasive particles from the cylinder by orienting the magnetic path in the direction of fluid flow.

Regarding claim 9, Blange '998 discloses the gradient zone is helically arranged around the separator, see figure 5.

Allowable Subject Matter

13. Claims 3, 4, 10, 11 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

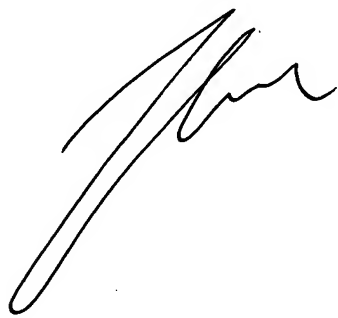
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mai T. Nguyen whose telephone number is (571) 272-7662. The examiner can normally be reached on Monday-Friday 8:00a-5:00p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will can be reached on (571) 272-6998. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3671

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mtn
6/19/07

For


Thomas B. Will
Supervisory Patent Examiner
Group 3600